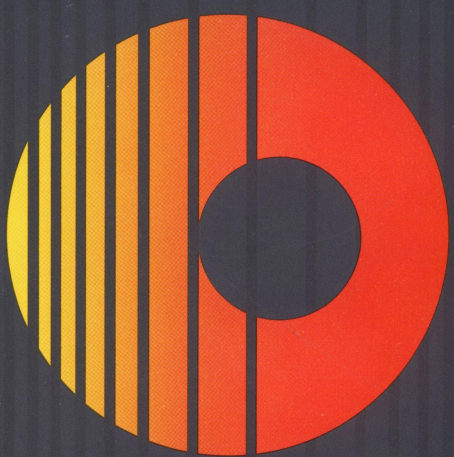
DOT

SOFTWARE DECISIONS:

The DOT™ Guide to Software Selection



SOFTWARE DECISIONS:

The DOT™ Guide to Software Selection

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PUTTING SOFTWARE INTO PERSPECTIVE

A computer is like a good soldier: it follows orders. Often, many people think of an electronic brain when they hear the word computer. A computer is really just electronic muscle.

The brains of the computer is the program or, more correctly, the person who creates the program. A program is a list of instructions that the computer follows to perform a useful task. The key to a computer's versatility is its programmability. Whenever you want to change the computer's function, you simply load a different program into its electronic memory.

The hardware machinery of a computer is like a work crew waiting for a job description. It must accept each new program as the boss. A program, on the other hand, is like a baseball manager: it may be the boss, but it could find itself replaced at any time by its owner—you, the user.

A program is much easier to change than the hardware machinery of a computer system. For this reason, it is called the "software" part of the system. Software is the key to realizing the maximum benefit from your computer system.

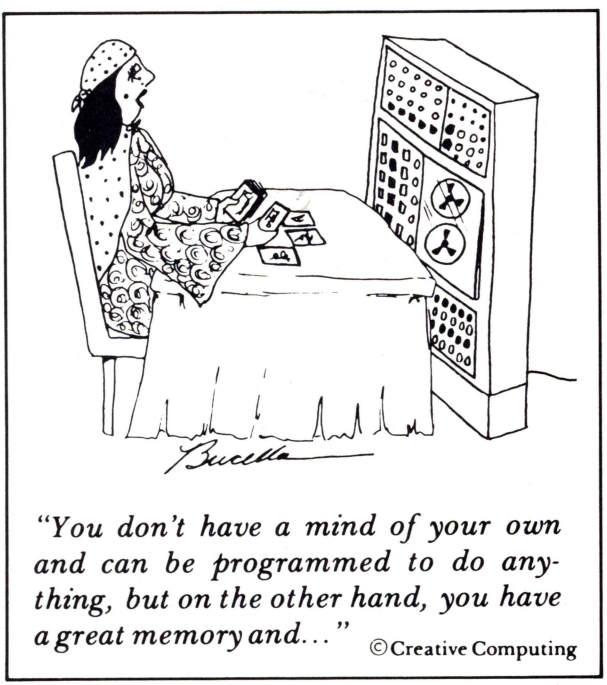

Bucella
"You don't have a mind of your own and can be programmed to do anything, but on the other hand, you have a great memory and..."
©Creative Computing

Illustration by Martin Bucella.

THE SUCCESSFUL SYSTEM

"The entire package mailing job is done by computer here— including sealing the envelope."

Illustration by Al Johns.

The measure of a successful computer system is the utility it provides its users. Some systems are so successful that people wait in line to use them. How can you choose a system that spells success for you? Here are some important considerations:

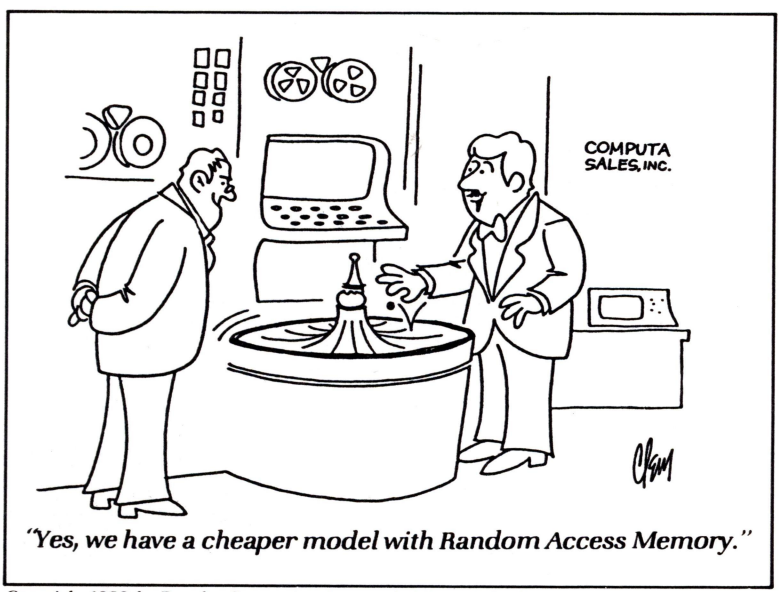
- **Planning**—Successful system acquisition depends entirely on planning. You must assess all of your goals for computer system performance before you select either the hardware or the software.
- **Selecting Hardware**—To choose the right hardware, you need to rank hardware capabilities according to their importance to your application. You should also research the availability of software and service for the hardware you select.
- **Selecting Software**—A variety of microcomputer software is on the market today. At first, this large selection of programs can be confusing. You can clear up this confusion by recognizing that usually just a few of the available programs serve any

single application. After you identify the programs that meet your requirements, you can investigate each program to find the best one for you.

- **Setting Up Your Application**—Unfortunately, finding a software program that meets your needs does not mean you can immediately produce results such as sales forecasts and management reports. You must also invest both time and thought into moving your data from your file drawers to your computer. Quality software with good user documentation can facilitate this process, but it takes "people power" to get things going right.
- **Managing Your Software**—If you regularly process a large amount of data, your software investment includes managing that data base. For example, a mailing list usually requires frequent additions, deletions, and changes. The software you select should let you conveniently maintain your data; it should also easily allow you to make backup copies of your data in case something happens to the original version.

PLANNING YOUR SYSTEM

The best way to make today's decision is to plan for tomorrow's requirements.



"Yes, we have a cheaper model with Random Access Memory."

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Reprinted from InfoWorld. Illustration by Clem Scalzitti.

Before you purchase a computer system, you should have a clear idea of the tasks you want it to perform. Each computer system has strengths and weaknesses. You should compare a computer system's strengths with your requirements to select the best computer for your applications.

Ask yourself these questions:

1. What jobs do I want the computer to perform now?
2. What jobs might I want the computer to perform later?
3. How much can I spend on the hardware and software for my system?
4. What kind of support will I need?

Although planning beyond your immediate needs is difficult, it can extend the usefulness of your system. It can also save you money, because you will be able to expand your applications without having to purchase a more expensive system.

A qualified computer salesperson can show you how to satisfy your current needs and help you to plan for your future requirements. You can also obtain valuable information by talking to computer users who have already had to make decisions similar to those you are facing now.

SELECTING THE RIGHT HARDWARE

Illustration by Coni Porter.

There are five basic hardware components that comprise a "complete" computer system: a video display, a keyboard, a printer, a disk drive, and the computer. There are many optional devices you can add to this list, but these are the components found in most microcomputer systems today.

When selecting computer hardware, ask yourself these questions:

1. What do I have to buy in addition to the basic unit to have a functional computer system?
2. Will the hardware configuration accommodate the programs I need and the tasks I want the system to do?
3. Is the memory of the computer adequate to meet the requirements of the programs I want to use?
4. Can I expand the memory? If so, by how much?
5. Does the system consist of many units available separately that need to be connected by a maze of wires? Or is it an integrated system like the DOT™?
6. How many characters and lines can the screen display at once?
7. How many special-function keys does the keyboard have?
8. Does the keyboard include a numeric keypad?
9. Do the diskettes provide adequate storage and speed for my applications?
10. Can the computer communicate through the telephone system? If so, is the equipment built-in? Or do I need to buy an external modem (a device that turns computer data into tones for transmission through the telephone system)?
11. Does the system come with a printer? If so, how fast is the printer? How wide a line can it print?
12. Can I attach a typewriter-quality printer for producing drafts with a professional appearance?
13. What are the limitations of the system which could prevent or restrict my use of the computer for future applications?

The DOT computer provides the right answers to all these questions. Its hardware satisfies the requirements of nearly every application. For example, you can expand the DOT memory or add a typewriter-quality printer for special duties.

DOT is a trademark of Computer Devices Incorporated.

Illustration by David Harbaugh.

SELECTING THE RIGHT SOFTWARE

Computer software used to be very expensive because relatively few people bought a particular program. This situation has changed. The personal computer revolution has created a new mass market for programs. As with any mass-produced item, programs are becoming less expensive as sales increase.

Financial modeling, word processing, and accounting are applications that dominate today's market. Most major manufacturers provide software for these popular applications.

For less common applications, you will probably have a harder time finding programs. Many software manufacturers do not provide information for modifying programs, because these modifications might affect the program's reliability. However, a programmer can sometimes make minor changes to an existing program to meet your requirements.

Software Features to Look For

Over the past 30 years, software engineers have devised many ways to simplify the operation of computer programs. The earliest programs required experienced programmers to make

them work. Today, most programs feature English-like commands that nonprogrammers can easily memorize and use to control programs.

Many of today's programs use a series of menus to prompt the user. These menus list your choices, with a short description of what happens when you make each choice. Here is a command menu for a hypothetical word processing program:

1 Create document
2 Edit document
3 Save document
4 Print document
5 Help

Enter number of desired operation:

Selecting any one of these menu choices may cause a new menu to be displayed. If you select 3 to "Save document", the next menu might tell you to give the document a new name and to select which disk drive you want to use for saving the document.

"Menu-driven" programs eliminate the need for memorizing the commands to operate your program. You never have to wonder whether you are using the wrong command.

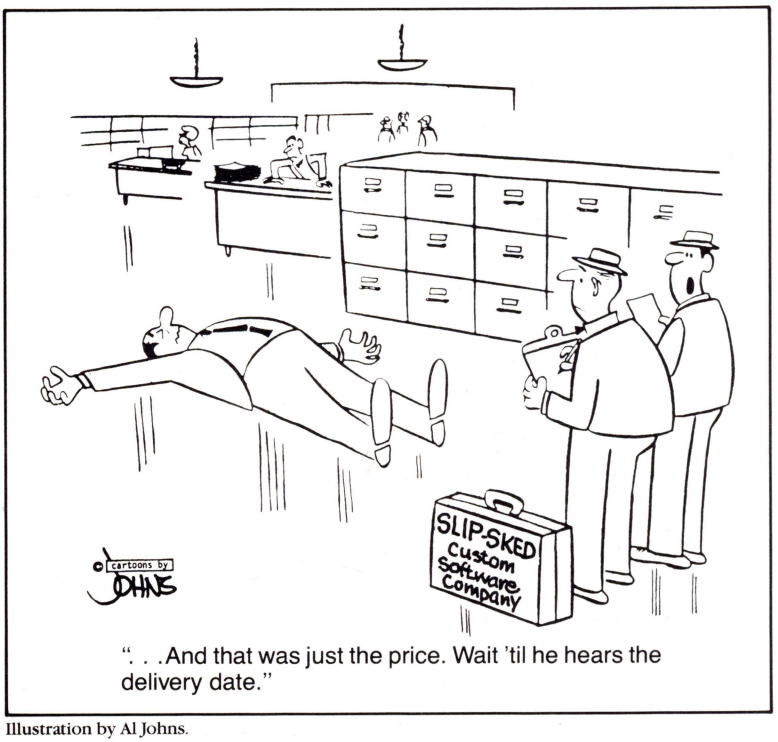
However, having a series of menus doesn't guarantee that a program will be easy to use. Your choices should be sensible and simple. If you want to print one of your computer files, you would find it unreasonable to type a meaningless string of characters such as XXJ2XX.

A good program also includes a Help function. The Help function shows which commands are available and what they mean. On a menu, the Help function can assist you by providing an expanded description of each choice. The Help function should also work hand-in-hand with any error messages to simplify correcting mistakes.

Packaged versus Custom Software

For the greatest economy and reliability, choose packaged software. Packaged software is relatively inexpensive because the fixed costs of research, development, and project management are spread over many copies of the program.

If you cannot find the exact packaged program to fit your needs, you must either modify your requirements for an existing program or spend money to develop a custom program.



". . .And that was just the price. Wait 'til he hears the delivery date."

Illustration by Al Johns.

The cost of custom programming is high, both in terms of programming time and in management expenses. In the planning stage, you must specify your needs concisely to avoid inaccurate interpretation by the programmer. You also need to ensure that your system hardware can perform all of the tasks that you have specified.

After the program is written, someone must test it before you can trust it with your valuable data. Programs for general distribution undergo months of on-the-job testing before they reach the market. Every programming manager can tell horror stories about programs that misplaced or jumbled information, causing months of work to be lost.

Last, as the uniqueness of custom software makes it much more expensive to create, it is also more expensive to document and maintain.

Despite these drawbacks, certain applications may warrant the expense and potential headaches of custom programming. Such applications may serve a major need in your company, provide benefits which offset their costs, or result in software that you can sell.

For example, a life insurance company might justify the cost of custom software by equipping each agent with a portable DOT computer to prepare insurance quotes. By quoting the costs of various insurance plans from the client's home, the agent can simplify sales and increase company profits.

For some applications, the "program-generator" is beginning to emerge as an alternative to custom programming. It enables you to select the calculations you want to perform. Then it produces a program to match your specifications.

If your dealer or sales representative can convert software developed for another computer to operate on your system, this alternative is preferable to contracting for custom software. To contain costs and promote reliability, you should view custom software as a last resort for complex applications.

SETTING UP YOUR APPLICATION

Finding software with the right features is only part of software selection. The ease of getting your application up and running is equally important. Depending on your application, you may need some or a lot of vendor support and training. And all good software should have good documentation to help you realize the benefits of your system as quickly as possible.

Selecting the Right Vendor

Be careful when selecting the vendor for your software, because vendor support can be a critical element in the success of your computer system. Keep in mind that the help a vendor gives you before the purchase is only the first step; training and assistance after you buy your software is equally or even more important.

Pre-sales support services can vary from a catalog with a telephone number to a fully stocked computer showroom with knowledgeable salespeople who offer system demonstrations and answer questions. Post-sales support may range from that same catalog and telephone number to on-site training and maintenance. Ask yourself how much support you will need before selecting a vendor. Then research the level of support that various vendors offer.

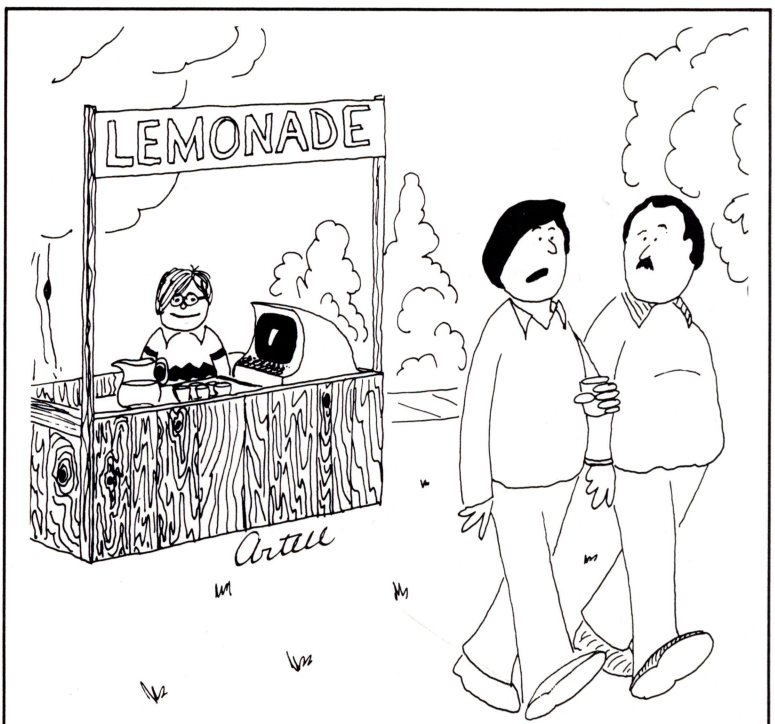
Often, a mail-order catalog or brochure doesn't tell you everything you want to know about a program. You can obtain personal assistance in selecting hardware and software from a computer sales representative. Computer salespeople should

know the important details about the operation of the systems they sell. They should also have a software specialist to back them up on difficult questions.

When you outline your requirements, the salesperson should be able to recommend and demonstrate an applicable software package, if one exists. The vendor should also be able to supply you with names of satisfied customers. Ask these current users for their evaluations of the software and of that vendor's support for the software.

Many dealers will be eager for a sale, but they may not have the capability to provide adequate post-sales support. If you think you will need training and applications support to make the best use of your software, make sure your vendor offers them.

Training enables you to use your system immediately and efficiently. Many dealers offer free training for the software that they sell. This policy actually saves the dealers time, because it eliminates most of the telephone calls that they would otherwise receive from untrained users.



"When I was a kid, my lemonade stand didn't have a point-of-sale terminal."

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"In a nutshell, we've got a dissatisfied customer case."

Illustration by Michael Artell.

An experienced instructor can show you the best way to use the various program options with your application. The instructor can also suggest ways that you can streamline your day-to-day operations to take the best advantage of the computer's capabilities.

In case you experience problems that your software vendor cannot solve, your vendor should maintain solid lines of communication to the software manufacturer or publisher. You should never have to listen to the excuse, "No one understands your problem, therefore it can't be happening." Ask the vendor representatives how special problems are handled. Their responses should indicate how strong the lines of communication to the manufacturer are.

A Good Program Has Good Documentation

No matter how thorough your training, sometimes you will have to consult the instruction manual for information about your program. A good instruction manual should be easy to read by nontechnical users.

If the manual is filled with "computerese" terms that it never explains, you will have a hard time understanding the information it is trying to convey. The language in manuals for non-technical users should be plain English, not computerese.

The organization of the instruction manual is extremely important when you are looking for specific information. Some manuals are organized so haphazardly that you must read them cover-to-cover to be sure you haven't missed anything.

A complete manual includes a table of contents that shows you how the manual is organized and what functions are explained in each section. A detailed index enables you to locate information about a specific subject quickly. For experienced users, many good manuals also include a compact quick-reference card or summary that describes each command briefly.

The operation of each command in a program is easier to understand if the command description is illustrated with examples.

There should be a separate example for each different way you can use the command. A new user can quickly learn to use a program by following the examples in a good instruction manual.

"Listen . . . you'll simply have to send someone back here to give us more instructions on how to operate your new 684 model!"

Illustration by Al Johns.

MANAGING YOUR SOFTWARE

A final consideration in selecting software is: how will you "live" with your software once you own it? Affecting your decision here are the manufacturer's reputation for maintaining software, your need for convenient data and program backup, and the likelihood that you will want to share your data.

Software maintenance consists of the programming modifications made to software after it is "released" or sold. If you find a problem with a commercially produced software package, chances are that other users are having similar problems. Your software vendor should be able to provide assistance. If the problem affects many users, the manufacturer can provide updated programs to correct the problem.

Backing Up Your Software

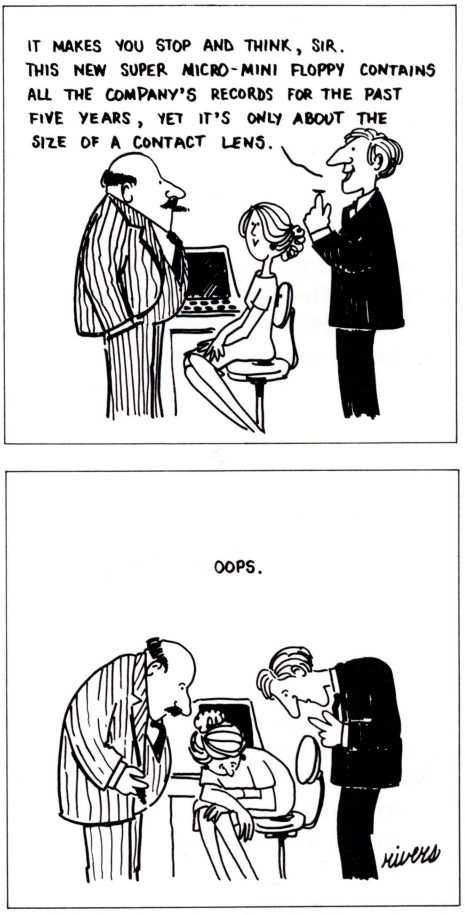
After you have spent months creating a mailing list or filling a file with inventory stock numbers, you want to know that your data is safe from accidental destruction. A good program makes it easy for you to back up your data, so you can avoid losing those months of work if you accidentally drop your diskette into the paper shredder.

Your investment in the data stored on a diskette is far greater than the cost of the diskette itself. You should think of this investment when you select a safe place for storage. Professionals keep backup data in a fireproof safe in a building separate from their computer system.

Backing up your program is nearly as important as backing up your data. True, you can buy another program diskette if you accidentally destroy yours—but you will probably lose time while you are obtaining the new copy.

Some programs cannot be backed up, because their authors fear that they will lose sales to people who copy their programs illegally. With a few of the more sophisticated programs, you can copy the program diskette once but are prevented from making further copies. Ask about program backup when you shop for software.

Note: If the manufacturer makes it easy for you to copy your program for backup purposes, you should do this immediately. However, you should not take advantage of the manufacturer's generosity by making copies for use on other computer systems. The laws against program copying are now expanding to meet the growing threat of software piracy.


IT MAKES YOU STOP AND THINK, SIR. THIS NEW SUPER MICRO-MINI FLOPPY CONTAINS ALL THE COMPANY'S RECORDS FOR THE PAST FIVE YEARS, YET IT'S ONLY ABOUT THE SIZE OF A CONTACT LENS.
OOPS.
rivera

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Sharing Your Data

If you are thinking of buying a series of programs, you should find out if the programs can share the same data files. For example, you can avoid retyping your entire mailing list if you have different programs that can share the same mailing list data.

Financial data is another example of information that you might like to share. Your general ledger program should be able to access data from the accounts receivable file, the accounts payable file, the inventory file, the price list file, the vendor file, and the customer file. A graph-plotting program could use these same files to produce valuable charts for planning purposes.

SELECTING SOFTWARE FOR YOUR DOT

Your DOT is a state-of-the-art computer system. It combines compact dimensions with the capabilities of many larger computer systems. You have several options when selecting programs for the DOT.

- Computer Devices offers valuable software packages for the DOT. These packages include programming languages, operating system software, word processing programs, spreadsheet packages, and accounting programs.
- Computer Devices also works closely with major software houses who supply DOT-compatible programs. In most cases, these firms already produce popular programs for other personal computer systems. They modify these programs for use on the DOT. Computer Devices can supply you with a list of these "third-party" programs.

The DOT computer incorporates the industry-standard Intel 8088 microprocessor to ensure compatibility with a large variety of existing software. However, you should consider some other factors when you purchase software for your DOT.

"I've got to hand it to you, Hodgekiss, I never believed you'd get 10 megabytes of data on a frisbee."

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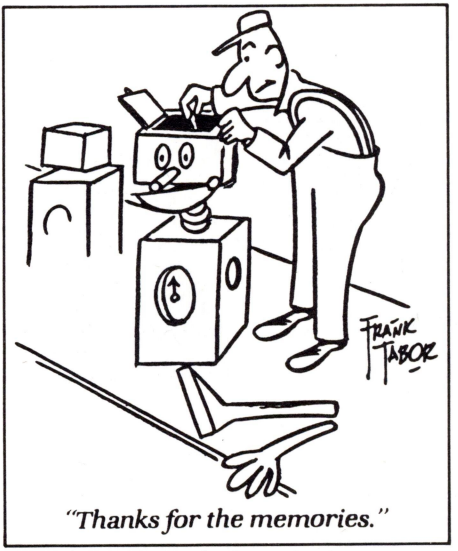
Micro-Diskettes

The most important physical requirement is that the software you buy for the DOT computer must be available on a 3 1/2-inch Sony diskette. The formatting of these diskettes must be compatible with the DOT as well.

Memory Requirements

Once you have a DOT program on a 3 1/2-inch diskette, the next factor you must consider is the memory size of your DOT computer. The memory of the DOT can contain from 32K to 704K bytes of storage (1K represents 1024 characters of information).

Consult the documentation of the program you are thinking of buying to be sure that your DOT can provide enough memory capacity to run the program. Consult Computer Devices or your DOT dealer for information about DOT memory expansion.



"Thanks for the memories."

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The Operating System

The operating system software is an important consideration when you are looking for software for a specific application. The operating system is a set of programs that controls the physical devices in a computer system.

For example, when you instruct a mailing list program to print a name on the printer, the mailing list program sends the characters in the name to the printer through the operating system program. The operating system accepts the characters from the mailing list program and calls up a special program that does nothing but control the printer through the system hardware.

Operating system software is very complex. The authors of operating system software frequently design this software so that they can customize it for compatibility with each of many different computer systems.

Computer Devices supplies the DOT with the Microsoft MS™-DOS Version 2.0 disk operating system. All programs that you buy for the DOT must be compatible with MS-DOS Version 2.0, unless you purchase another operating system.

IN SHORT

Before you purchase a computer system:

- Define your application and needs.
- Research the compatibility of the hardware and software.
- Be sure that enough support is available for both the hardware and software to match your requirements.

While you are setting up your system, incorporate good habits into your daily routine. Take care of your equipment. And most important, always back up your work. You will soon discover that your computer system is satisfying yet another need—more leisure time!

MS-DOS is a trademark of Microsoft Corporation.

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